Please substitute the following claim set for those currently of record:

1. -36. (Cancelled)

37. (Currently amended) A method for analyzing nucleotide sequences ~~variations~~, comprising:

forming microemulsions comprising one or more species of analyte DNA molecules;

amplifying analyte DNA molecules in the microemulsions in the presence of reagent beads, wherein the reagent beads are bound to a plurality of molecules of a primer for amplifying the analyte DNA molecules, whereby product beads are formed which are bound to a plurality of copies of one species of analyte DNA molecule;

separating the product beads from analyte DNA molecules which are not bound to product beads;

determining a sequence feature of the one species of analyte DNA molecule which is bound to the product beads by flow cytometry~~;~~

~~isolating using fluorescence activated cell sorting product beads which are bound to a plurality of copies of a first species of analyte DNA molecule from product beads which are bound to a plurality of copies of a second species of analyte DNA molecule.~~

38. (Cancelled)

39. (Currently amended) A method for analyzing nucleotide sequences ~~variations~~, comprising:

forming microemulsions comprising one or more species of analyte DNA molecules;

amplifying analyte DNA molecules in the microemulsions in the presence of reagent beads, wherein the reagent beads are bound to a plurality of molecules of a primer for amplifying the analyte DNA molecules, whereby product beads are formed which are bound to a plurality of copies of one species of analyte DNA molecule;

separating the product beads from analyte DNA molecules which are not bound to product beads;

determining a sequence feature of the one species of analyte DNA molecule which is bound to the product beads;

isolating product beads which are bound to a plurality of copies of ~~a first~~ the one species of analyte DNA ~~molecule from product beads which are bound to a plurality of copies of a second species of analyte DNA molecule~~;

amplifying the ~~first~~ one species of analyte DNA molecule from the isolated product beads.

40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Currently amended) A method for analyzing nucleotide sequences ~~variations~~, comprising:

forming microemulsions comprising one or more species of analyte DNA molecules;

amplifying analyte DNA molecules in the microemulsions in the presence of reagent beads, wherein the reagent beads are bound to a plurality of molecules of a primer for amplifying the analyte DNA molecules, whereby product beads are formed which are bound to a plurality of copies of one species of analyte DNA molecule;

separating the product beads from analyte DNA molecules which are not bound to product beads;

determining a sequence feature of the one species of analyte DNA molecule which is bound to the product beads by hybridization to oligonucleotide probes which are differentially labeled.

44. (Currently amended) A method for analyzing nucleotide sequences ~~variations~~, comprising:

forming microemulsions comprising ~~one or~~ more than one species of analyte DNA molecules;

amplifying analyte DNA molecules in the microemulsions in the presence of reagent beads, wherein the reagent beads are bound to a plurality of molecules of a primer for amplifying the analyte DNA molecules, whereby product beads are formed

which are bound to a plurality of copies of one species of analyte DNA molecule;

separating the product beads from analyte DNA molecules which are not bound to product beads;

determining ~~relative or absolute~~ amount~~s~~ of product beads comprising ~~one or more sequence features~~ a first species of analyte DNA molecule as a fraction of product beads.

45. (Currently amended) The method of claim 44 wherein the ~~relative or absolute amounts~~ are determined using flow cytometry.

46. -59. (Cancelled)

60. (Currently amended) A method for isolating nucleotide sequence~~s~~ ~~variations~~, comprising:

forming microemulsions comprising ~~one or~~ more than one species of analyte DNA molecules;

amplifying analyte DNA molecules in the microemulsions in the presence of reagent beads, wherein the reagent beads are bound to a plurality of molecules of a primer for amplifying the analyte DNA molecules, whereby product beads are formed which are bound to a plurality of copies of one species of analyte DNA molecule;

separating the product beads from analyte DNA molecules which are not bound to product beads;

isolating using fluorescence activated cell sorting product beads which are bound to a plurality of copies of a first species of analyte DNA molecule from product beads which are bound to a plurality of copies of a second species of analyte DNA molecule.

61. (Cancelled)

62. (Currently amended) A method for isolating nucleotide sequence~~s~~ ~~variations~~, comprising:

forming microemulsions comprising ~~one or~~ more than one species of analyte DNA molecules;

amplifying analyte DNA molecules in the microemulsions in the presence of reagent beads, wherein the reagent beads are bound to a plurality of molecules of a primer for amplifying the analyte DNA molecules, whereby product beads are formed

which are bound to a plurality of copies of one species of analyte DNA molecule;

separating the product beads from analyte DNA molecules which are not bound to product beads;

isolating product beads which are bound to a plurality of copies of a first species of analyte DNA molecule from product beads which are bound to a plurality of copies of a second species of analyte DNA molecule;

amplifying the first species of analyte DNA molecule from the isolated product beads.

63. -84. (Cancelled)

85. (New) A method for analyzing nucleotide sequences, comprising:

forming microemulsions comprising more than one species of analyte DNA molecules;

amplifying analyte DNA molecules in the microemulsions in the presence of reagent beads, wherein the reagent beads are bound to a plurality of molecules of a primer for amplifying the analyte DNA molecules, whereby product beads are formed which are bound to a plurality of copies of a first species of analyte DNA molecule and product beads are formed which are bound to a plurality of copies of a second species of analyte DNA molecules;

separating the product beads from analyte DNA molecules which are not bound to product beads;

determining proportion of product beads comprising the first species of analyte DNA molecule to product beads comprising the second species of analyte DNA molecule.

86. (New) The method of claim 44 wherein the first species of analyte DNA molecule is a mutant allele.

87. (New) The method of claim 85 wherein the first species of analyte DNA molecule is a mutant allele.

88. (New) The method of claim 87 wherein the second species of analyte DNA molecule is a wild-type allele.

89. (New) The method of claim 44 wherein the first species of analyte DNA molecule is a wild-type allele.

90. (New) The method of claim 85 wherein the first species of analyte DNA molecule is a wild-type allele.